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(54) Title: STREPTOCOCCUS PNEUMONIAE KNOCKOUT MUTANTS

(57) Abstract: 91 genes have been identified in *Streptococcus pneumoniae* that, when knocked out, result in a lethal phenotype. A further 10 genes have been identified that, when knocked out, result in poor growth characteristics when cultured in the absence of blood. These 101 genes are essential to bacterial growth and are thus useful antibiotic targets. Their invention includes knockout mutants for these 101 genes and screening methods involving the protein products of the 101 genes.